



LESSON STUDY MANAGEMENT IN SMP LOKON ST. NIKOLAUS TOMOHON, NORTH SULAWESI, INDONESIA

*Yonas Atjas¹ | J.A.M. Rawis² | F.J.A. Oentoe² | H.N. Tambingon²

¹Sekolah Tinggi Filsafat, Jl. Raya Tomohon, Minahasa Regency, North Sulawesi, Indonesia. (*Corresponding Author)

²State University of Manado, Jl. Kampus IKIP Tomohon, North Sulawesi, Indonesia.

ABSTRACT

This study aims to analyze the lesson study management of SMP Lokon St. Nikolaus Tomohon that covers planning, implementation (plan, do, see), evaluation, supporting and inhibiting factors, and problem solution. It used a qualitative method, and data collection was conducted through interviews, observations, and documentation. Results showed that lesson study planning was done through internal meeting of the school members, workshop planning, training for learning plans implementation, preparation of open class schedule, selection of teacher models and observer. The implementation phase of lesson study covered implementation of open class, the school principal an observer, learning plans implementation and reflection on learning process. The evaluation was accomplished before, during, and after the lesson study process. The lesson study program is strongly supported, since it is taken as school program, school commitment is strong, teachers are willing to participate in the lesson study, and there are high enthusiasm of the model teacher and observer, workshop and training implementation, sufficient learning facilities, solid executing team, good collaborative and collegial spirit, and mentoring of lesson study sources. Nevertheless, it is also inhibited by difficulty in open class schedule preparation, short time allocation for lesson study, and limited sources of lesson study. Therefore, it is necessary to have review on open class schedule, teacher preparation as lesson study expert, and teacher's commitment in school activities. The principal should also condition and plan the school work programs well, so that the school residents could participate in from the planning process, implementation, and evaluation of the lesson study.

KEYWORDS: planning, implementation, learning process, evaluation, principal, teacher, school force.

INTRODUCTION:

Education is a process to influence, develop, and direct the students in all life aspects. It can also be meant as process and product. The process is human activities with its environment. Consequently, education is a result of human interaction with its environment, daily living behavior. Indonesian Law Numbered 23/2003 concerning National Education System claims "education is a conscious and planned effort to realize the learning condition and learning process that the learners actively develop their potential to have the spiritual strength of religion, self-control, intelligence, venerability, and skill, that are needed by him/herself, society, nation, and country." The trust of the Law confirms that school education is not a random process, but it is a process that has clear and ever-planned goals to have good, interesting, and innovate learning condition and learning process for students. It means that the educational process is oriented in student's active learning. Education is also an effort to develop all potentials of students. Hence, the task of any educational unit is to optimally try to develop the potential of students, and not to force students the teaching materials in order to be able to memorize data and facts. Nevertheless, the educational unit tries to organize an innovative, interactive, and enjoyable educational process, and to give students opportunities to increase their interest and talent. Therefore, the principal and teachers have major role. They are important actors to achieve the school working program for the success of student's learning. The principal has a central and vital tasks in an educational unit. The leadership of the principal becomes the key of educational unit success. Ideal principal is capable of understanding and implementing the managing functions, planning, organizing, actuating, and controlling. The role of the principal is indispensable (Mulyasa, 2007). He is responsible for organizing the education, the school administration, education force mentoring, utilization and maintenance of infrastructure, as well as supervisor at the school. The management functions include the capability of planning, organizing, directing, motivating, implementing, controlling, evaluating and innovating. A reliable and integrated-school principal has ability to make the learning implementation be well done by the teachers. For instance, in learning process development, the principal needs to plan innovative working programs in order to increase the teacher's professional. Therefore, the principal needs to encourage and involve teachers in any school program.

According to Mulyasa (2007), lesson study is one of the coaching models of the educator's profession through collaborative and sustainable learning assessment based on collegial and mutual learning principles in order to build a learning community. This explanation indicates that lesson study is activities that create an innovative learning process through collaborative and collegial principles among teachers, the principal and teachers, and teachers and students. Through lesson study, the principal is assisted to do class supervision through the observer teacher. Ngang and Sam (2015) present that lesson study is a development process of teacher's professional initiated in Japan, and it has been assigned to support intense changes in teaching (Takahashi and McDougal 2016). It is a class supervision system in which several teachers collaboratively plan, teach, observe, and revise a learning in class. Lesson study is not limited to knowledge and insights, a practice to be observing and learning in order to continuously

improve the service quality of education and learning to the students (Suryanti, 2015). Lesson study has shown significant impact on both teacher's and student's mathematical knowledge (Lewis and Perry, 2014; Gersten et al., 2014). Lesson study is a development activity of teacher's professionally by involving other teachers. Lesson study, learning study, and action research have been debated their orientations (Hanfstring et al., 2019; Elliot, 2019; Marton, 2018), but all approaches aim to improve the quality of lesson. Lesson Study has shown to be capable of enhancing mathematics teachers' quality and promoting teacher's professional development (Lomibao, 2016). Nevertheless, lesson study has not been effective outside of Japan due to misinterpretation or cultural differences so that many aspects of lesson study as practiced in Japan are taken out (Fujii, 2014).

In North Sulawesi, lesson study program has started since 2008 under collaboration program between the government of North Minahasa Regency and Japan International Cooperation Agency (JICA) that aims to increase the education quality in North Sulawesi region. Since then, lesson study has begun to be socialized by the Education Quality Development Institution (EQDI) to secondary schools in North Sulawesi for the development of teacher's professional and student's learning quality. Nevertheless, it fails to reach the benefit of the program since bad school management, the school principals are not capable of encouraging teachers to run the program, and there is no teacher's motivation to improve themselves in learning (Wuisan, 2013).

As a result, there are several secondary schools outside North Minahasa Regency starting to implement the lesson study program, including the secondary school SMP Lokon St. Nikolaus. Lesson study was introduced in SMP Lokon in 2015. Then, the school principal has begun to prepare the lesson study program through workshops to obtain better comprehension about the program. In 2018, lesson study program was continued by the SMP Lokon under specific mentoring of the EQDP of North Sulawesi Province.

Initial interviews found several constraints in SMP Lokon in relation with lesson study implementation: (1) the principal has not been optimal yet in managing the learning implementation plan preparation; (2) the principal is still paying less attention on the implementation of learning plan in the open class. The learning implementation plan has not been applied as learning guide, but as administrative requirements fulfilment of the education; (3) weak control of learning process in the class; (4) The principal's supervision has not been well programmed and planned; (5) learning is still being done by providing the teaching materials.

To reach a success of the lesson study activity, a good management of the principal is needed. It means that the success of the lesson study in school depends upon the management model run by the principal. Through this activity, the principal executes the management functions that cover planning, organizing, implementing, and monitoring. The principal must give strong support to the lesson study implementation. Without the principal's commitment and support, the lesson study program will, of course, not be successful.

This paper describes the lesson study management in SMP Lokon St. Nikolaus with the emphasis on the school principal's management capability to implement the program and the impact of the lesson study on the teacher's learning and teaching development.

METHOD:

This study utilized a qualitative method in the Secondary School SMP Lokon St. Nikolaus Tomohon, North Sulawesi. This site selection results from that this school is a model school for lesson study program assisted by the Education Quality Assurance Board of North Sulawesi Province. The study was carried out for 8 months, July 2019 to February 2020. Lesson study program was focused on mathematics and natural sciences. Data were collected from field observations during the implementation of lesson study and interviews to the involved references, such as school principal, vice principal, model teacher, observer, colleagues, and lesson study knowledgeable others. For this, 10 respondents were selected consisting of those who were involved in the whole process of lesson study. Other information was gathered from class observation sheet, participant's comments on lesson study implementation, Learning Implementation Plan document produced by model teachers and other colleagues, lesson study implementation process from planning to evaluation phases, and school statistics of teacher, education force, students, school works program (Moleong, 2007). These data were used to describe the entire process of the lesson study implementation in SMP Lokon St. Nikolaus Tomohon and its impact on the learning process.

RESULTS:

Based on the lesson study implementation observations in SMP Lokon Tomohon, documentation, and interviews with school and the knowledgeable others, there were interesting findings in relation with learning and teaching processes in the secondary school SMP Lokon.

Lesson Study Planning Management:

In planning, the school principal made several activities, i.e communication with lesson study knowledgeable others as mentor, lesson study workshop planning and training on learning implementation plan preparation for teachers, establishment of an executive teamwork of the lesson study, preparation of lesson study implementation and evaluation schedules, and internal meeting of the school members for open class preparation. Through this phase, it was expected that all school members could understand and be aware of the importance of improvement in teacher's learning and teaching.

Lesson Study Management Implementation:

The implementation of the lesson study management was directly coordinated by the principal and involves the vice principals, all teachers of the study programs, the education force, and the lesson study expert. There were 3 phases of the lesson study implementation conducted, i.e. plan, do, and see. Some activities in SMP Lokon were related with lesson study, lesson study management as school program, workshop and training on lesson study, training on learning implementation plan preparation, and open class implementation for model teachers using learning model or media. The teachers who do not have teaching schedule became observers. The principal was also present in the open class session and led the lesson study implementation process. As result, the lesson study developed good collaboration and mutual learning between the principal and the teachers. In addition, the model teachers could be able to design the learning activities in the form of Learning Implementation Plan and student's worksheet.

Lesson Study Management Evaluation:

This aspect is very important to be a process or activity of selecting, collecting, analyzing, presenting the information that can be used as a basis of decision making and preparation of next program information. The interviews on the evaluation of the lesson study management implementation of the school principal found that the principal had important role in lesson study evaluation process. The evaluation plan and implementation were collaboratively carried out with strong emphasis on the learning community, in which the lesson study evaluation was done before, during, and after the lesson study process. The evaluation outcomes were prepared in the form of written report that was useful for future improvement and development process.

Lesson Study Implementation Supporting Factors:

The present study found several dominant supporting factors as follows: strong support and commitment of the principal, sufficient facilities and infrastructures, very solid lesson study executor and collaboration, high enthusiasm of the model teacher, good collaboration between school leader and school residents. Good moral and financial support of the Lokon Education Foundation and intensive mentoring of the lesson study knowledgeable others gave high contribution to the lesson study program implementation.

Lesson Study Management Inhibiting Factors:

Several constraints detected in the lesson study implementation were (1) the implementation schedule was still accomplished in regular teaching hours; (2) Time allocation of the lesson study was still short; (3) not all course teachers have got open class session yet; (4) limited budget was available for lesson study activities; and (5) lack of expert with sufficient capability on lesson study. The role of the observers has not been optimal yet because they were not familiar with lesson study program.

DISCUSSION:

Lesson study management implementation planning:

Based on the findings mentioned above, it is apparent that the lesson study program firstly occurred in SMP Lokon St Nikolaus Tomohon from discussion between the lesson study knowledgeable others of Education Quality Assurance Institution (EQAI) of North Sulawesi Province and the school principal to implement and develop the lesson study program. The first meeting with the principal of SMP Lokon Tomohon was conducted on Friday, July 12th, 2019. The lesson study could be implemented due to the commitment of the principal and the mentoring of the North Sulawesi EQAI mentor. It is in agreement with Subadi (2010) that the principal needs to be involved in the lesson study since his role as a decision maker in the school. His involvement could make important and right decision for learning quality development through the lesson study.

Therefore, before implementing this activity, the principal of SMP Lokon Tomohon has made a planning. According to Wiyani (2012), planning is the establishment of a series of actions to achieve a desired output. This aspect is very important to the principal, because it becomes an initial management function of a leader in the educational unit. The management planning of the lesson study program starts with formation of a lesson study implementing teamwork executed by the school principal. According to Sutrisno (2018), teamwork is a job system conducted by two people or more to achieve the planned goal. It is a form of collaboration in several human resources of different backgrounds, same position. The teamwork helps the principal formulate the work program and then prepare the implementation and evaluation schedule of the lesson study.

The preparation of the activity schedule is one of the very good planning construction forms to start a work program. Chambers (1995) stated that schedule is something that explains where and when people and the resources are at certain time. It also describes the list or table of activities or activity plans with detail implementation time separation. The present study found that the schedule of lesson study was directly made by the principal and assisted by the team work of the lesson study. The schedule was prepared together with the vice principal of curriculum division that it did not slash the teaching schedule of the model teachers or observer teachers and other school activity schedule.

In the next step, the school principal and the teamwork gave explanation to the school residents concerning the lesson study program through socialization, internal meeting, workshop or training on learning implementation preparation of the lesson study model. This activity was carried out on Friday, July 19th, 2019. Planning is usually related with the development of vision, mission, objective, and strategy, that are usually given in basic program structure (Matin, 2015). Therefore, Planning provides clear desired goals, task scope, people involved in core activities, various needed resources, working steps with their urgencies and priorities.

Other planning made by the school principal was to determine the model and observer teachers. The model teachers involved in the open class were still restricted to mathematics and IPA teachers and the observers were the teachers of the same course and other courses. The selection of model teacher and observer was done through mutual deliberation and their working schedule was established. The model teacher determination is very crucial at the early stage that they could prepare themselves for the materials, learning media, learning plan to evaluation form.

Lesson Study Management Implementation:

1. Phase Plan:

There were several activity programs conducted in preparation of open class implementation for the model teacher and the observer. These activities covered workshop, training on learning implementation preparation, student's work sheet preparation, and put together the learning method or learning media. These phases are consistent with Lewis and Perry (2017) in relation with how to manage the teamwork in running the learning process.

Workshop on lesson study:

The school principal planned the workshop on lesson study involving all teachers. The objective of the workshop was to give detail understanding to the teachers concerning the concept, the goal, the characteristic of the lesson study and its benefit for a teacher. Workshop is one of the strategy planned to obtain good outcome and ease an activity process. For this, two lesson study experts were invited from Education Quality Assurance Institution of North Sulawesi. Through training, the teachers have awareness that Learning Implementation Plan is important and results in paradigm shift. They have also knowledge on how to create good learning implementation plan and become skillful, creative, and innovative teachers in learning implementation plan preparation.

Learning implementation plan training and preparation:

One of the designs made by the school principal was to provide training on learning implementation plan for teachers. According to Susetya (2017), learning design is very important step before learning implementation, because mature planning is required that the implementation can effectively run. Learning design was put into the Learning Implementation Plan or other terms, such as learning design and learning scenario. In lesson study, learn-

ing design was not prepared by course teachers themselves, but prepared together. The learning implementation plan is a collaborative output of the teachers in line with course group. It was designed as minimum as possible as deep thought output of the model teacher and the colleagues concerning teaching materials, learning objective, and learning activities from introduction, major learning, closing, and grading.

Preparation of student's worksheet:

The school principal asked the model teachers to plan the preparation of student's worksheet. In this stage, the model teacher and other colleagues prepare the activity steps that must be done by students with the learning design following the learning model, method, approach, and strategy established in the plan activity. The student's worksheet was prepared as teacher's effort to educate students to achieve the set learning goals. In fact, students could find the solution and the concept through group discussion. Student's involvement in learning process was higher than that in other courses beyond the lesson study program, and they were also highly keen to focus on the teaching materials.

Preparation of learning observation sheet:

The school principal and the lesson study teamwork prepared the learning observation sheet. It was used by the teacher colleague as observer at the time of open class. The teacher's observation sheet is intended to record interesting thing done by the students at learning process, such as the attitude in learning (not only order or discipline), learning development of students, and many other things that could become source of learning improvement obtained by the teamwork. Based on the observations, students became more serious and focused on learning process. It is shown in student's attitude changes in the classroom, in which when they get bored, students will find various reason to leave the class. They could also reformulate their findings that science becomes an intellectual witness to prove something.

Based on several planning activities, it is clear that planning stage in open class be always designed and carried out collaboratively by the school principal, teamwork, model teacher, or other teachers. If the school principal cannot be present, he will be represented by the curriculum-related vice principal. For instance, the learning implementation plan is designed through open discussion in order to have a good quality learning implementation plan. The collaboration in lesson study highly emphasizes the collegiality principle and mutual learning to build a learning community.

2. Phase *do*:

Open class implementation in SMP Lokon Tomohon was carried out twice for mathematics, Monday-Tuesday, August 19th-20th, 2019, and for Biology, Wednesday-Thursday, August 21st-22nd, 2019, respectively. This implementation has been scheduled at the time of planning preparation. Phase *do* is learning implementation activity performed by the model teacher as established in the learning implementation plan and student's worksheet. In this phase, one team member teaches the research lesson, and the other team members observe the lesson and collect data with a particular focus on understanding student responses.

Model teacher has very important role in the class at this phase. He/she works to implement the learning plan and student's worksheet using various possible methods and media in order to provide more interesting and innovative learning technique. The selection of learning method and media is consistent with the taught materials, the school condition, and student condition in class. Isran and Rohani (2018) confirm that for teachers, learning media helps concrete the concept or idea and motivate the students to actively study. For students, learning media could become the bridge to critically think and do. In other words, the media could help the tasks of the teachers and the students achieve the established standard competence.

The school principal directly observed the learning process done by the model teacher. In this case, the principal has carried out the management function as controller. He has controlled the process of lesson study implementation through open class. Besides that, the colleague/observer teacher had to observe the learning process in the class, but not evaluate the teacher. The observer's role is more dominant to observe the student's interaction. It is in line with Mulyana (2007) that interactions among students, students-teaching material, students-teacher, students-other environments were carefully recorded, using the observation tools pre-prepared and created together. The observer should be able to learn from the learning implementation and encourage the teacher to be more confident. The observer could also take a video or photograph for documentation and as future analytical materials, but it should not interrupt the learning process. Student's behavior was also recorded during the learning, such as comments or discussion, and the student's name should be able to be recorded. The present study used 5 observers in each open class and total number of open classes were 4 activities. Similar observations are also accomplished by the school residents.

The teacher who works as an observer needs to carefully observe the learning process of students, especially on their learning attitude that is not limited to the discipline behavior of the students. As frequently mentioned by

the expert that student's action in class is direct and indirect results of the learning design implemented by the model teacher. This is very important to help giving comments, input and improvement at the reflection phase (see). Two major things were observed in *open class*: (1) does every student really follow the class? and (2) how is the quality of student's learning? When the learning is going on, the observer paid attention on whether there is any problem for students to follow the lesson. The information was recorded in the available observation sheet. During the open class session, the observers were not allowed to talk to other observers or even students or involved in the learning process. Also, the observer did not focus on the teacher's teaching performance, but on the student's learning activities following the procedure and the instruments agreed at the planning phase. The school principal also gave opportunity to other teachers, not model teacher, and the observer to be able to see the teaching and the student's learning process in the classroom. In other words, the lesson study program highly emphasizes the learning community. It is consistent with Nursafitri (2018) that lesson study is the activity that can promote the formation of learning community who consistently and systematically makes personal improvement at either the individual level or the managerial level. Students are capable of focusing on learning and problem solving, and the collaboration among students could develop, the learning desire is increasing, and the strong is encouraged to help the weak.

Therefore, the success of the lesson study program implementation is highly dependent upon the school principal. The principal is expected to support the school residents to make the lesson study implementation run well. According to Wiyani (2012), motivating is one of the management functions, such as providing inspiration, spirit, and motivation to the subordinate that the subordinates voluntarily do the activity as expected by the leader. The school principal could (1) act as facilitator, animator, and general coordinator, (2) arrange the implementation schedule that does not disturb the teacher's tasks, observer, teamwork, (3) monitor and evaluate the implementation of the lesson study.

3. Phase *See*:

Reflection meeting on the learning process (*open class*) was conducted by the model teacher at the end of an open class. The reflection was done twice, on August 19th-20th, 2019, for mathematics and August 21st - 22nd, 2019 for natural sciences, respectively. This phase was carried out to examine the whole process from phase plan to do. It was accomplished through deep discussion followed by all components involved in the lesson study. The mechanism was done together by the principal, model teacher, observer, and other colleagues.

In this phase, the school principal gave general comments and suggestion based on the direct observations during the learning process. Then, the model teacher gave his impression and experience on the implemented learning. These were usually negative factors, such as complaints, felt by the teacher, but it was always directed by the knowledgeable other to give beneficial experiences that they could learn something to improve themselves in learning implementation. Therefore, all observers must convey their observations based on only their field observations and not on their interpretation. It is done to make the teachers get used to it that they do not judge or give the list of errors that need to be improved by the model teacher, but the teachers are more directed to learn from the success and the failures of other people to be reflected to themselves. Thus, *see* activity is more than just a discussion to evaluate the learning, but it becomes a mutual improvement process without hurting other people.

Phase *see* has very crucial role. The reflection outcomes become the standard reference for teachers to plan the next learning. This explanation is in line with Mulyana (2007) that the improvement effort of future learning process will depend on the analytical strength of the participants based on the learning implementation data. Therefore, phase *see* in lesson study program is an improvement effort of the next learning design made by either the model teacher, the observer teacher, and all components involved in the open class activity. In addition, this phase is intended to increase the learning quality that the student's learning output could be better. This phase covers:

Management implementation evaluation:

One of the school principal's tasks is to evaluate all programs or activities in school including the learning process conducted by the teachers. The principal made the evaluation of the lesson study implementation using collaboration and collegiality principles. Hence, the school principal invited the school residents consisting of model teacher, observer, colleagues, and the knowledgeable other to make joint reflection in relation with the lesson study implementation. In evaluation meeting, each teacher group of related courses gave suggestions and inputs for the perfection of the next learning. The collaboration principles will facilitate the teachers to build an effective and efficient learning community, while the sustainability principles will give teachers opportunity to be a long life learning community (Hendayana, 2007). Each school resident had also the opportunity to give objective comment and input based on data and information collected during the lesson study implementation

process. With this collaboration, it is expected that the evaluation could increase the teacher's capability in designing the learning and organizing the learning that answers the student's rights in their study.

In the present study, the evaluation was carried out before, during, and after the learning process at the open class. It is intended to collect information on student's development and achievement, and teacher's teaching effectivity in the lesson study program. Prior to the learning process implementation, the evaluation was focused on the learning materials, media, and method to be used, learning the student's characters, student's capability, and preparing the assessment instrument. During the learning process, the evaluation is used to find and improve the learning problems, either learning design implementation of the model teacher or learning media used. Moreover, the evaluation after the open class implementation is aimed to measure the achievement of the students in learning in relation with the achievement of learning goals and their rights in their study. The evaluation after the open class is also intended to evaluate the entire lesson study management process with recommendations on the sections necessary to be improved and developed. Thus, the evaluation becomes crucial step to increase teacher's professional in teaching and mutual learning process among teachers.

Supporting factors of lesson study management implementation:

Strong commitment of the school principal is a major factor of lesson study management implementation. This program cannot run well without the commitment of the principal. According Miyono (2013), commitment is the soul that underlies the goal achievement. In educational institution, particularly several schools including the foundation of private schools, commitment has become one of the requirements to have a position in school. It is a relationship characteristic between the individual and the institution, in which the individual has self-confidence to the values and the objective of the work organization. Therefore, commitment could be taken as the someone's ownership of responsibility, loyalty or sacrifice in their work.

The presence of sufficient infrastructures, solid lesson study teamwork and collaboration, high enthusiasm of the model teacher, good collaboration between the school leader and the school residents, good support of the foundation, and intensive mentoring of the lesson study expert also promote the success of lesson study implementation. This finding is supported by Cynthia et al (2016) that education facilities cover all facilities, both mobile and immobile, needed in learning process that the achievement of the educational goals could be smooth, orderly, effective, and efficient to have an optimal learning output.

Other supporting factor are the school principal's policy to set the lesson study in SMP Lokon as school flagship program and to prepare more lesson study experts. For instance, the school principal of SMP Lokon sent two mathematics and science teachers to increase their capability in both subjects in Jakarta. This policy will give good opportunity to the teachers to involve and participate in lesson study implementation. Since lesson study is established as school program, all school residents have responsibility to the implementation of mentoring model of teacher's professional development through lesson study. English teacher and Bahasa Indonesia teacher who were involved in evaluation phase, found lesson study as very strong and potential learning method, and they would consequently practice the lesson study in their courses.

The presence of the knowledgeable other who mentored and became the facilitator for teachers, such as in the workshop and training on the lesson study, also strengthens the lesson study implementation. It is consistent with Subadi (2010) that in lesson study implementation, the school can invite other competent people who care of student's learning, such as school supervisor, or university experts. This statement confirms that the management of lesson study implementation in school cannot be separated from the role of other people who have their competence concerning the lesson study. In this case, SMP Lokon got help through the mentoring of the expert from the Educational Quality Assurance Board.

The lesson study activities require collaboration between colleagues and facilitator that learning process accomplished by the teacher is more effective (Vygotsky, 1978). Learning could awaken a variety of internal development processes that are able to operate only when the child is interacting with people in his environment and in cooperation with his peers. Learning builds various internal development processes that are capable of operating only when the kid interacts with surrounding people and works together with friends.

Inhibiting factors of lesson study management implementation:

The first problem before lesson study implementation is the preparation of open class schedule that has to adjust the recent regular teaching hour. This situation makes the teamwork and the principal have to work hard in schedule preparation while considering the school activity

agenda, the readiness of the model teacher, and the observer teacher. The teamwork needs to find the right day in preparing the schedules, from planning meeting, open class implementation, and evaluation meeting. However, the teamwork still had difficulty to establish the schedule since the team has to adjust to the activity schedule of the teacher and school. As a result, the open class could often interrupt the teaching hours of the observers and makes not all teachers be able to become observers in the open class. Similarly, the teacher who has the same teaching schedule as the open class implementation of the colleagues has to give the assignment to the students. The open class schedule often clashed the teaching schedule of the observer teacher and their colleagues. It makes not all teachers be able to attend several agenda of lesson study implementation in either preparation, implementation or evaluation meetings.

The other constraints found in the lesson study program implementation in SMP Lokon was very short time available for the program implementation so that not all teachers have participated as model teacher yet and lack of lesson study expert availability. The school leader hopes that in the next semester, the lesson study could be made as school's flagship program so that its implementation could be scheduled and all course teachers could get the opportunity in the open class activity. Moreover, the presence of two lesson study experts from the Education Quality Assurance Institution of North Sulawesi is considered not enough due to time limitation since the school needs intensive and periodic mentoring in order to make the school residents understand and well implement the lesson study program. The school principal cannot also attend all open class and reflection sessions because he has to do various regular school programs as well.

Efforts to overcome the constraints in lesson study management implementation:

One of the school principal's strategies to maximize the lesson study program in future is to make it be the school's flagship program that it could be involved in the academic calendar and integrated in the school curriculum. The lesson study program has started with mathematics and natural science. Through this experience and evaluation, other teachers internally implement lesson study in English and Indonesian courses. For this, the specific schedule of the lesson study implementation will be prepared that it does not disturb the teaching schedule of the teachers and all teachers could get their opportunity to be model teacher and observer. Therefore, the available schedule was evaluated and reviewed by the teamwork together with the school principal to make sure that it does not clash with the teaching schedule of the observer and other teachers.

The school principal has encouraged the development of teacher's professional and learning process through lesson study as the form of his responsibility. Therefore, the monitoring data and reporting on the lesson study implementation need to be followed up by the principal as a manager in the educational unit in the form of forecasting as the role of school principal's management. With the information and data obtained, a school principal is capable of predicting, projecting or assessing the next possibility before a new plan is implemented (Wiyani, 2012).

The school principal prepares one or two teachers to join a training or mentoring on lesson study led by mentor of North Sulawesi Education Quality Assurance Institution. This expert is expected to be promotor and mentor for other teacher colleagues so that the lesson study activity could become a habit in school. The school needs to add more budget as well for the lesson study implementation, preparing the school residents to become experts in lesson study, the school residents are obliged to participate in lesson study, and motivates teachers, makes various training activities for teachers, and forms learning community.

CONCLUSIONS:

In developing lesson study program in SMP Lokon St. Nikolaus, the school principal was so serious and had very strong commitment to develop teacher's professionals in learning and teaching. Therefore, lesson study was adopted as school flagship program. During the lesson study implementation, the principal has prepared the lesson study planning together with other colleagues. He was always available and directly monitored the lesson study implementation process using the principles of *plan, do, and see*. The principal led and conducted the evaluation of the lesson study before, during, and after the process. There were several factors supporting the lesson study program in SMP Lokon, such as the principal's acceptance and commitment, sufficient facilities and infrastructures, very strong executing team, high enthusiasm of the model teacher, good collaboration between the principal and teachers, and intensive mentoring of the lesson study knowledgeable other expert. Several problems were found in the program implementation as well, such as the implementation schedule of lesson study still used the regular teaching hours, short time allocation for lesson study, not all course teachers have not got opportunity in the lesson study, and limited mentor availability. Hence, the school principal has done improvements through the

better lesson study schedule management, preparing teachers to be expert of the lesson study, participation of all teachers in the lesson study, the principal's motivation to the teachers and training, such as workshop and seminar, and learning community formation.

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